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**United States Patent** [19]**Kataoka et al.**[11] **Patent Number:** **5,617,117**[45] **Date of Patent:** **Apr. 1, 1997**[54] **INPUT DEVICE**5,327,161 7/1994 Logan et al. .... 345/173  
5,376,947 12/1994 Karada ..... 345/173[75] Inventors: **Mitsuteru Kataoka**, Katano; **Takeshi Imanaka**, Nara; **Atsushi Tanaka**, Neyagawa; **Sozo Yamamoto**, Osaka, all of Japan*Primary Examiner*—Regina D. Liang  
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345/173, 145, 162; 178/18, 19[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

The present invention is directed to the provision of an input device for inputting coordinates that is natural to operate. In the present invention, coordinate input device outputs one- or higher-dimensional coordinates of an object placed in close proximity thereto or in contact therewith, and pressed or not-pressed information indicating whether said object is pressed or not pressed thereon. Cursor generating device accepts at its inputs the coordinates and the pressed or not-pressed information output from the coordinate input device, repositions the cursor in accordance with the input coordinates, and outputs an image with the external appearance of the cursor changed in accordance with the pressed or not-pressed information. Further, image generating device outputs a synthesized image synthesized by combining an image output from the cursor generating device and an image input at an image input terminal. Display device accepts the image output from the image generating device and displays the synthesized image.

**3 Claims, 20 Drawing Sheets**